

Avalanche Creek Bridge
Spanning Avalanche Creek, on Going-to-the-Sun Road
Glacier National Park
Flathead County
Montana

HAER No. MT-73

HAER
MONT
15-WEGLA,
1-

PHOTOGRAPHS
WRITTEN HISTORICAL AND DESCRIPTIVE DATA

Historic American Engineering Record
National Park Service
Department of the Interior
Washington, DC 20013-7127

HISTORIC AMERICAN ENGINEERING RECORD

AVALANCHE CREEK BRIDGE
HAER MT-73

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MONT,
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Location: Spanning Avalanche Creek, on Going-to-the-Sun Road, approximately eighteen miles northeast of the park entrance at West Glacier, Glacier National Park, Flathead County, Montana
UTM: Mount Gannon Quad. 12/292550/5395500

Date of Construction: 1935-1936

Structural Type: Three-span reinforced concrete slab bridge with masonry guardrail

Contractor: W.K. Trippet, Whitefish, Montana

Engineer: Bureau of Public Roads

Owner: Glacier National Park

Use: Vehicular bridge

Significance: The Avalanche Creek Bridge is one of approximately seventeen prominent masonry and concrete structures on Going-to-the-Sun Road in Glacier National Park. The 51-mile stretch of scenic road is significant as a unique engineering accomplishment of the early twentieth century, and as the first product of a 1925 cooperative agreement between the National Park Service and the Bureau of Public Roads. The Avalanche Creek Bridge was built during a major reconstruction of the road in the 1930s.

Project Information: Documentation of the Avalanche Creek Bridge is part of the Going-to-the-Sun Road Recording Project, conducted during the summer of 1990 under the co-sponsorship of HABS/HAER and Glacier National Park. Researched and written by Kathryn Steen, HAER Historian, 1990. Edited and transmitted by Lola Bennett, HAER Historian, 1992.

For measured drawing, see HAER MT-67A, sheet 1.

Going-to-the-Sun Road

The Avalanche Creek Bridge is a three-span reinforced concrete slab bridge over the Avalanche Creek on Going-to-the-Sun Road, a scenic park road that winds through the spectacular mountains and valleys in the middle of Glacier National Park. The 51-mile road, built in sections between 1911 and 1933, and rebuilt during the next two decades, runs east and west through the park. Starting in the west, the road runs from West Glacier, along the 10-mile eastern shore of Lake McDonald and then up McDonald Creek for an additional ten miles. About one mile beyond the junction with Logan Creek, the road begins its ascent to Logan Pass. The road climbs at a 6-percent grade, passes through a tunnel, and turns at a major switchback called "The Loop." Following the contours of the sides of Haystack Butte and Pollock Mountain, the road passes over several bridges, culverts, and retaining walls, before reaching Logan Pass. Beyond the Pass, the road descends to the east along the sides of Piegan Mountain and Going-to-the-Sun Mountain before running along the north shore of St. Mary Lake. The road exits the park as it crosses Divide Creek near St. Mary, Montana.¹

Significance of the Road

Going-to-the-Sun Road is significant as an outstanding engineering feat of the early twentieth century. In addition, the road was the first product of the interagency cooperative agreement between the National Park Service (NPS) and the Bureau of Public Roads (BPR). The agreement, signed in 1925, allowed the National Park Service to utilize the roadbuilding expertise of the Bureau of Public Roads while still retaining control to protect the landscape.²

Avalanche Creek Bridge

In 1933 the park formally celebrated the opening of Going-to-the-Sun Road. Even as they noted their achievement, however, the BPR and NPS had plans for major reconstruction on the parts of the road built before 1925. About twenty miles on the west end and eight miles on the east end of the road had narrower roadways, tighter curves, and rustic log structures. Reconstruction of the west side began early in 1935, and during the next three construction seasons, the Going-to-the-Sun Road was improved from West Glacier to about one mile east of Logan Creek with a series of contracts. W.K. Trippet of Whitefish, Montana, won one of the contracts with a low bid of \$48,134. Trippet's contract obligated him to construct three structures--a bridge over Avalanche Creek, and two bridges over Snyder Creek. The bids were opened August 10, 1935 and Trippet started on Avalanche Creek Bridge the fall of 1935 and finished all three structures the following year.³

Trippet first shored up the existing log bridge over Avalanche Creek. The log bridge, built in 1923 by the contractor Laux and Gardner, was a product of the earliest construction on Going-to-the-Sun Road. Trippet also began excavation work on the foundations for the new bridge in the fall of

1935 and, using cofferdams, managed to pour the two piers and one abutment before winter forced him to shut down operations November 3.⁴

The following spring, Trippet finished the second abutment in April and erected the wooden falsework for the bridge proper. The contractor poured the reinforced concrete slab May 18. Most of the masonry for guardrails was completed during the summer. Early in August, the contractor filled in the approaches to the bridge and traffic started to use the bridge August 14. Finishing details on the bridge continued until September 1. Trippet also changed the channel of the creek "for several hundred feet" upstream and about 125' of the creek's bank received a hand-laid riprap.⁵

As a result of the agreement in 1925 between the National Park Service and Bureau of Public Roads, all subsequent contracts contained clauses designed to protect the landscape and make the structures blend into the natural environment. In particular, the specifications required the contractor to use construction materials native to the park.⁶ During reconstruction, many of the west side contractors, including Trippet, quarried their rock along the side of the road in the cliffs near the Haystack Creek Culvert.⁷

Another proviso of the contract, resulting from the Depression and the New Deal, obligated Trippet to hire his unskilled and semi-skilled labor from the National Reemployment Service. Much of his skilled labor also came through the agency. Each laborer was limited to 40 hours of work per week and received a guaranteed minimum wage. Unskilled workers earned \$.60 per hour, semi-skilled earned \$.75 per hour, and the skilled workers earned a minimum of \$1.00 per hour, although Trippet paid skilled laborers \$1.15.⁸

Description

The Avalanche Creek Bridge is a three-span reinforced concrete slab bridge with a masonry guardrail. The center span is 22'-0" long and the two outside spans measure 18'-9" each. The river flows under the bridge at an angle 30 degrees off perpendicular. The roadway is 27' wide, plus another 4' on either side for sidewalks.⁹ The bridge is equipped with several drainage pipes, many of which are covered with pavement. There is some spalling on the upstream ends of the piers.

ENDNOTES

1. See the Historic American Engineering Record report HAER MT-67 on the Going-to-the-Sun Road.

2. C.H. Purcell, F.A. Kittredge, J.A. Elliott, T.C. Vint, and C.J. Kraebel, Suggested Procedure for Cooperation Between the National Park Service and the Bureau of Public Roads in Major Traffic-Way Projects Within the National Parks, April 22, 1925 (Record Group 79, National Archives, Washington, D.C.).

3. A.V. Emery and John Zoss, "Final Construction Report on Glacier National Park, Transmountain Highway, West Side, Project NR 1-A Unit 1, Reconstruction, Grading and Draining, and Project 1-A, Unit 1, Bridges," July 28, 1939 (Glacier National Park Library Historical Files).

4. Emery and Zoss, "Final Construction Report."

5. Emery and Zoss, "Final Construction Report."

6. Purcell, et al, Suggested Procedure.

7. Emery and Zoss, "Final Construction Report."

8. Emery and Zoss, "Final Construction Report."

9. Emery and Zoss, "Final Construction Report."

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- Emery, A.V. and John Zoss. "Final Construction Report on Glacier National Park, Transmountain Highway, West Side, Project NR 1-A Unit 1, Reconstruction, Grading and Draining, and Project 1-A, Unit 1, Bridges," July 28, 1939 (Glacier National Park Library Historical Files, West Glacier, Montana).
- Historic American Engineering Record. "HAER MT-67: Coing-to-the-Sun Road." (Library of Congress, Washington, D.C.)
- Purcell, C.H., F.A. Kittredge, J.A. Elliott, T.C. Vint, and C.J. Kraebel. Suggested Procedure for Cooperation Between the National Park Service and the Bureau of Public Roads in Major Traffic-Way Projects Within the National Parks. April 22, 1925 (Record Group 79, National Archives, Washington, D.C.)